

Number Choices in Equal Sharing Problems

Number choice is very important when writing word problems. It takes teachers time and experience to develop skill at writing problems to fit the needs of their students. Consider the brownie problem as you answer the following questions.

Brownie Problem

Four children want to share 10 brownies so that everyone gets exactly the same amount and there are none leftover. How much brownie can each child have?

1. What determines the size of the denominator in the answer to the brownie problem?
2. Many children solve the brownie problem by using repeated halving. They continue to split the left over brownies in half, until there is a part for each person. Rewrite the brownie problem using different numbers, so students must use a strategy other than repeated halving to get a correct answer.
3. The answer to the brownie problem is equivalent to $2\frac{1}{2}$. Rewrite the brownie problem using different numbers, so the answer is less than one.
4. Children could get multiple correct answers to the brownie problem ($2\frac{1}{2}$, $2\frac{2}{4}$, or $\frac{10}{4}$). A discussion of these correct answers extends the learning to equivalent fractions. Rewrite the brownie problem using different numbers, so there will be multiple answers equivalent to $\frac{2}{3}$.